Acta Zootaxonomica Sinica , 33 (3) : 526 - 531 (July , 2008) ISSN 1000-0739
动物分类学报

TWO NEW SPECIES AND NEW RECORD OF THE GENUS STENOCHIRONOMUS KIEFFER IN CHINA (DIPTERA , CHIRONOMIDAE)

QI Xin[1,2] , SHI Shi-Di[2] , WANG Xin-Hua[1*]
1. *College of Life Science , Nankai University , Tianjin* 300071 , *China*
2. *Department of Life Science , Taizhou College , Taizhou , Zhejiang* 317000 , *China*

Abstract Two new species of Stenochironomus Kieffer , S. mucronatus sp. nov. and S. hainanus sp. nov. , are described and illustrated from China. S. inalemeus Sasa , 2001 is recorded in China for the first time.
Key words Chironomidae , Stenochironomus , new species , new record species , China.

1 Introduction

The genus Stenochironomus was erected by Kieffer in 1919. The type species is Chironomus pulchripennis Coquillett , 1902 , designated by Townes (1945) (Spies & Sæther 2004) . Based on the different hosts of larvae and pupae , Borkent (1984) erected two subgenera : subgenus Stenochironomus s. str. Kieffer (the larvae and pupae are mining dead subermerged wood) and subgenus Petalopholeus (the larvae and pupae are mining dead subermerged leaves) .

The genus presently comprises 88 species worldwide , 23 species in Palaearctic Region , 17 in the Nearctic Region , 27 in the Neotropical Region , 14 in the Oriental Region , 16 in the Afrotropical Region and 4 in the Australasian Region (Sublette et al. , 1973 ; Freeman & Cranston , 1980 ; Cranston & Martin , 1989 ; Borkent , 1984 ; Ashe & Cranston , 1990 ; Oliver et al. , 1990 ; Spies & Reiss , 1996 ; Kristoffersen , 1996 ; Sasa & Kikuchi , 1995 ; Sasa , 1998 ; Sasa et al. , 1999 , 2000 , 2001 ; Wang , 2000 ; Chaudhuri et al. , 2001 ; Zorina , 2001 ; Pineo et al. , 2005) .

In this paper , we describe two new species and record an additional species of the genus from China.

2 Materials and Methods

The morphological nomenclature follows that of Sæther (1980) . The material examined was mounted on slides , following the procedure outlined by Sæther (1969) . Measurements are given as ranges followed by the mean , when three or more specimens are measured , followed by the number of specimens measured (n) in parentheses. All type species are deposited in the College of Biology , Nankai University , China (BDN) .

The two subgenera erected by Borkent (1984) were based on the immatures , making it difficult to place species with only imagines known. Accordingly we do not assign subgeneric placement.

3 Species Description

Stenochironomus hainanus sp. nov. (Figs. 1-3)

Type material. Holotype male (BDN No. 1378) , China , Hainan Province , Changjiang County , Bawangling Natural Conversation area (18°60′N , 108°57′E) , 10 May 1988 , light trap , WANG Xin-Hua , Paratypes 2 males (BDN No. 1377 ; BDN No. 07567) , same as holotype.

Diagnosis. The combination of transparent wing without any pigmentation , parallel-sided , slender anal point with truncate apex , short and broad superior volsella with 3 setae , elongate inferior volsella with 3 long setae , and entire body yellow separate the species from other members of the genus.

Etymology. The name hainanus refers to the type locality Hainan Province of China.

Male imago (n = 3) .

Total length 2.80-3.10 , 3.05 mm. Wing length 1.58-1.72 , 1.60 mm. Total length/wing length 1.77-1.80 , 1.78. Wing length/length of profemur 1.58-1.62 , 1.59.

Coloration. Head yellow. Thorax greenish yellow. Abdomen yellow. Leg pale yellow.

Head. AR 0.96-1.33 , 1.15. Temporal setae 11-14 , 13 including 4-6 , 5 inner verticals , 4-6 , 5 outer verticals and 2-4 , 3 postorbitals. Clypeus with 7-10 , 8 setae. Tentorium 124-148 , 134 μm long , 28-36 , 32 μm wide. Stipes 72-88 , 82 μm long ; 24-32 , 30 μm wide. Palpomere lengths (in μm) : 40-48 , 43 ; 44-52 , 45 ; 164-200 , 178 ; 102-112 , 108 ; 152-168 , 163. L : $5^{th}/3^{rd}$ 0.80-1.02 , 0.95.

Wing (Fig. 1) . Wing transparent , without any pigmentation. VR 1.06-1.15 , 1.09. R with 20-26 , 23 setae ; R_1 with 20-25 , 22 ; R_{4+5} with 30-31 , 30. Squama with 10-15 , 12 setae.

Thorax. Dorsocentrals 8-13 , 10 ; acrostichals 14-

The subject was supported by the National Natural Science Foundation of China (30570207 , J0630963) and Fauna of China (2006FY120100) are thankfully acknowledged.

* Corresponding author , E-mail : xhwang@nankai.edu.cn

Received 28 Feb. 2008 , accepted 6 May 2008.

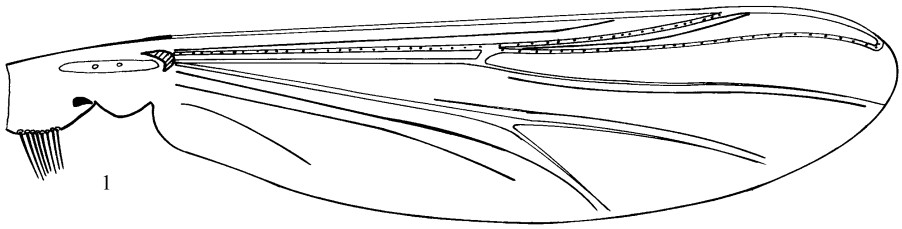
18, 16; prealars 4-5, 4; scutellum with 9-11, 10 setae.

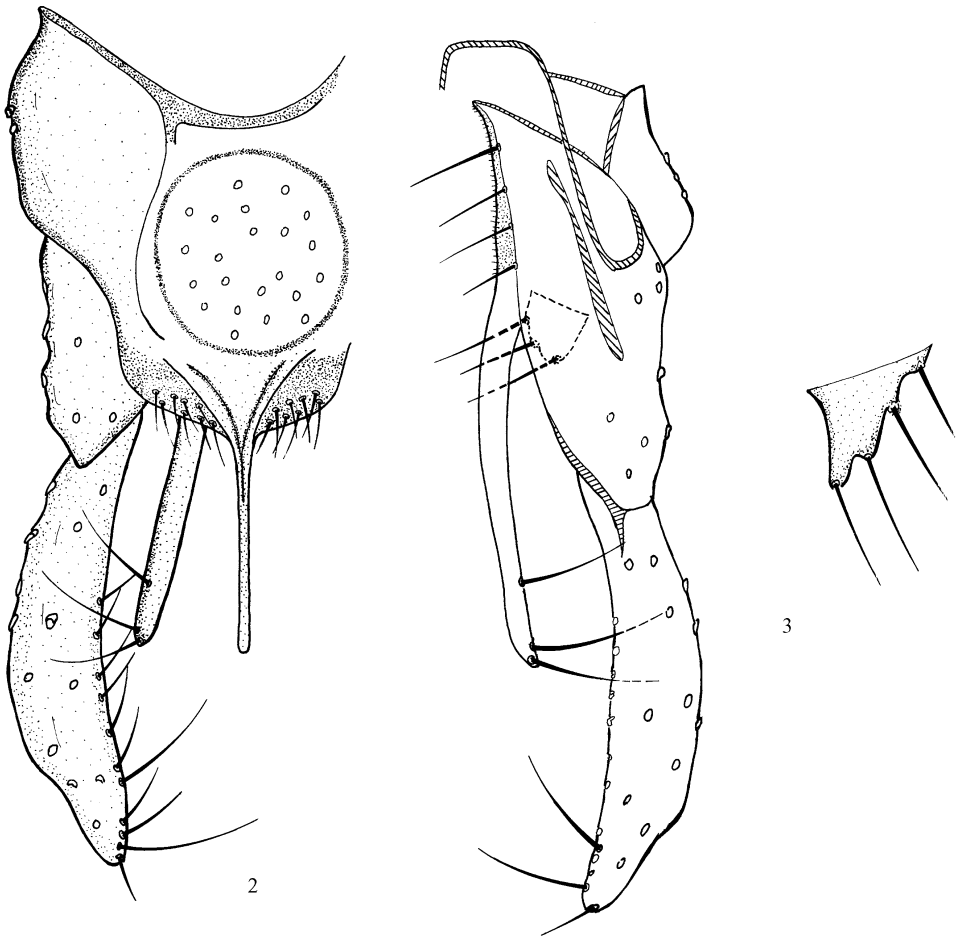
Legs. Posterior edge of front tibia with 4 strong setae. Spur on median tibiae 24-44, 32 μm and 30-44, 35 μm long including 26-32, 30 μm long comb; spur on hind tibia 20-32, 26 μm and 24-32, 26 μm long including 24-28, 26 μm long comb. Width at apex of front tibia 40-56, 48 μm, of middle tibia 48-56, 51 μm, of hind tibia 48-60, 53 μm. Lengths (in μm) and proportions of legs (Table 1).

Table **1.** Stenochironomus hainanus sp. nov. lengths and proportions of legs.

	fe	ti	ta_1	ta_2	ta_3
p_1	940-1 000, 960	800-960, 920	1 120-1 140, 1 125	580-600, 590	420-440, 430
p_2	800-880, 850	700-760, 730	480-520, 500	280-300, 290	210-220, 215
p_3	920-1 000, 960	840-980, 900	675-680, 678	400-420, 410	300-310, 305

	ta_4	ta_5	LR	BV	SV	BR
p_1	382-392, 290	158-168, 162	1.21-1.24, 1.23	1.89-1.94, 1.92	1.63-1.72, 1.68	2.83-2.91, 2.86
p_2	140-170, 150	79-80, 80	0.67-0.69, 0.68	2.73-2.81, 2.76	3.11-3.25, 3.18	2.60-4.67, 3.98
p_3	180-200, 190	80-100, 90	0.69-0.81, 0.73	2.64-2.70, 2.66	2.88-3.41, 2.97	4.17-4.29, 4.20





Figs. 1-3. S. hainanus sp. nov. 1. Wing. 2. Hypopygium. 3. Superior volsella.

Hypopygium. (Figs. 2-3). Anal point long and slender, parallel-sided with truncate apex, 70-72, 71 μm long, 12-16, 14 μm wide. Tergite IX with 17-22, 19 strong setae, posterior edge of tergite IX with 16 long setae. Laterosternite IX with 3-6, 4 setae. Phallapodeme 50-70, 60 μm long; transverse sternapodeme 36-50, 42 μm long. Gonocoxite 138-140, 139 μm long. Superior volsella (Fig. 3) short and broad, 20-28 μm long, with 3 setae. Inferior volsella 124-136, 130 μm long, with 3 long setae. Gonostylus widest in middle, narrowed in apical 1/4, apex tapering, 140-162, 153 μm long, with 2 long setae and 9 short setae along inner margin of distal 1/2. HR 0.85-1.00, 0.92, HV 1.91-2.16, 2.00.

Distribution. Hainan Island (Oriental China).

Remarks. The new species is close to S. nublipennis in the structure of the hypopygium, but can be separated by having transparent wing without any pigmentation and thorax without any pigmentation, while S. nublipennis as a large area of pigmentation on the wing and on the thorax.

Stenochironomus mucronatus sp. nov. (Figs. 4-6)

Type material. Holotype male (BDN No. 04786), China, Fujian Province, Longyan City, Shanghang County, Buyun Village (25°03′N, 116°24′E), 7 May 1993, light trap, WANG Xin-Hua.

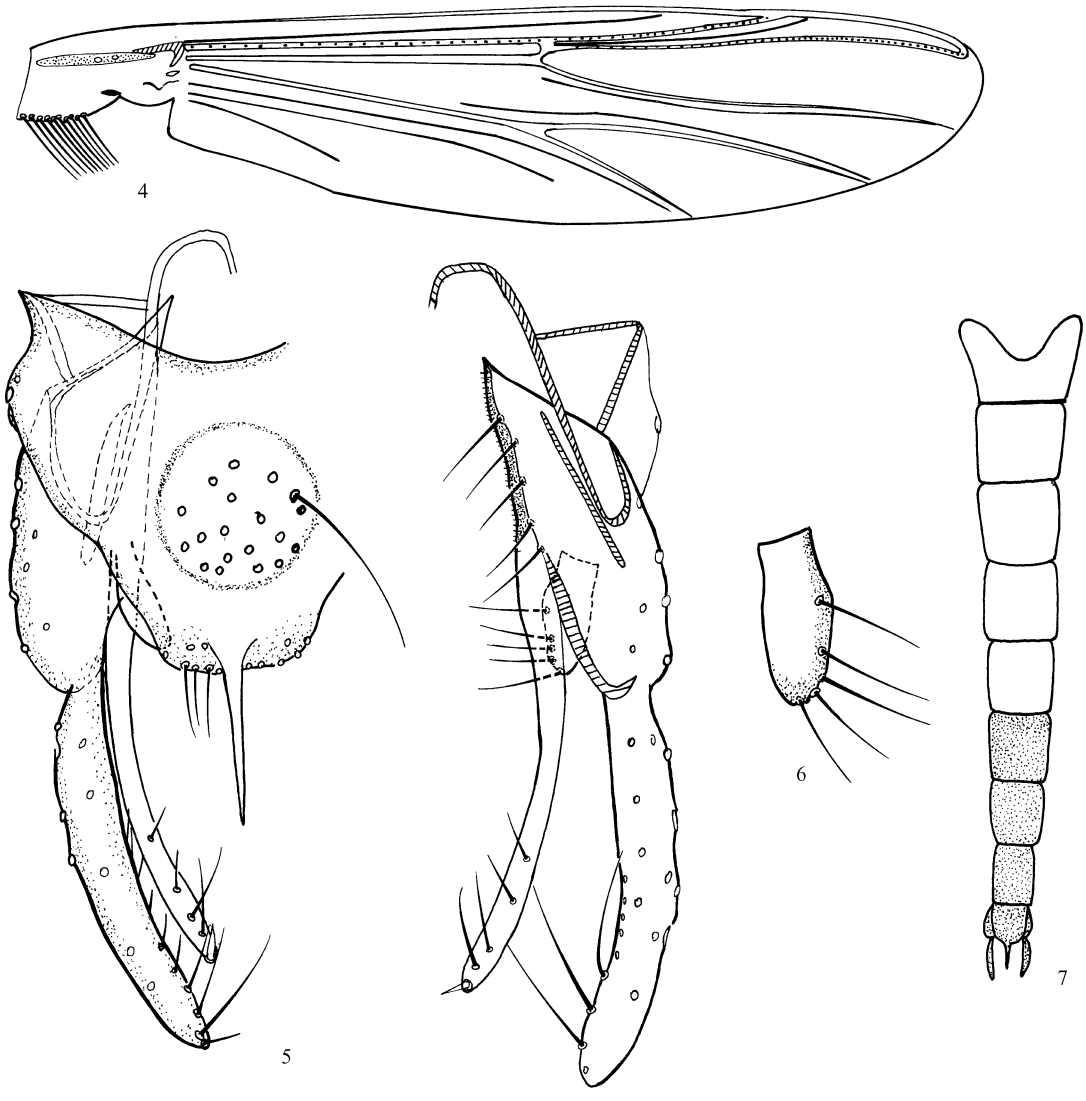
Diagnosis. The new species is similar to S. maculatus, but can be separated by having a triangular and pointed anal point, while the anal point of S. maculates is slightly swollen with rounded apex.

Etymology. From Latin, mucronatus, meaning pointed, referring to the pointed anal point.

Male imago (n = 1).

Total length 3.50 mm. Wing length 1.90 mm. Total length/wing length 1.84. Wing length/length of profemur 1.86.

Coloration. Head yellow, palpus light brown,



Figs. 4-7. S. mucronatus sp. nov. 4. Wing. 5. Hypopygium. 6. Superior volsella. 7. The pigmentation of abdomen.

antenna fully dark brown. Thorax yellow. Abdomen: the abdominal tergites I- V pale yellow, tergites VI- IX brown. Legs: yellow.

Head. AR 1.05. Temporal setae 10 including 4 inner verticals, 5 outer verticals and 1 postorbital. Clypeus with 17 setae. Tentorium 136 μm long, 40 μm wide. Stipes 120 μm long; 20 μm wide. Palpomere lengths (in μm): 32, 40, 168, 104, 192. L: $5^{th}/3^{rd}$ 1.14.

Wing (Fig. 4). Without any pigmentation. VR 1.08. R with 24 setae, R_1 with 24, R_{4+5} with 41. Squama with 10 setae.

Thorax. Dorsocentrals 9, acrostichals 12, prealars 4, Scutellum with 16 setae.

Legs. Scale of front tibia with 3 strong setae. Spur on median tibiae 28 μm and 32 μm long including 32 μm long comb; spur on hind tibia 24 μm and 32 μm long including 32 μm long comb. Width at apex of front tibia 64 μm, of middle tibia 64 μm, of hind tibia 72 μm. Lengths (in μm) and proportions of legs (Table 2).

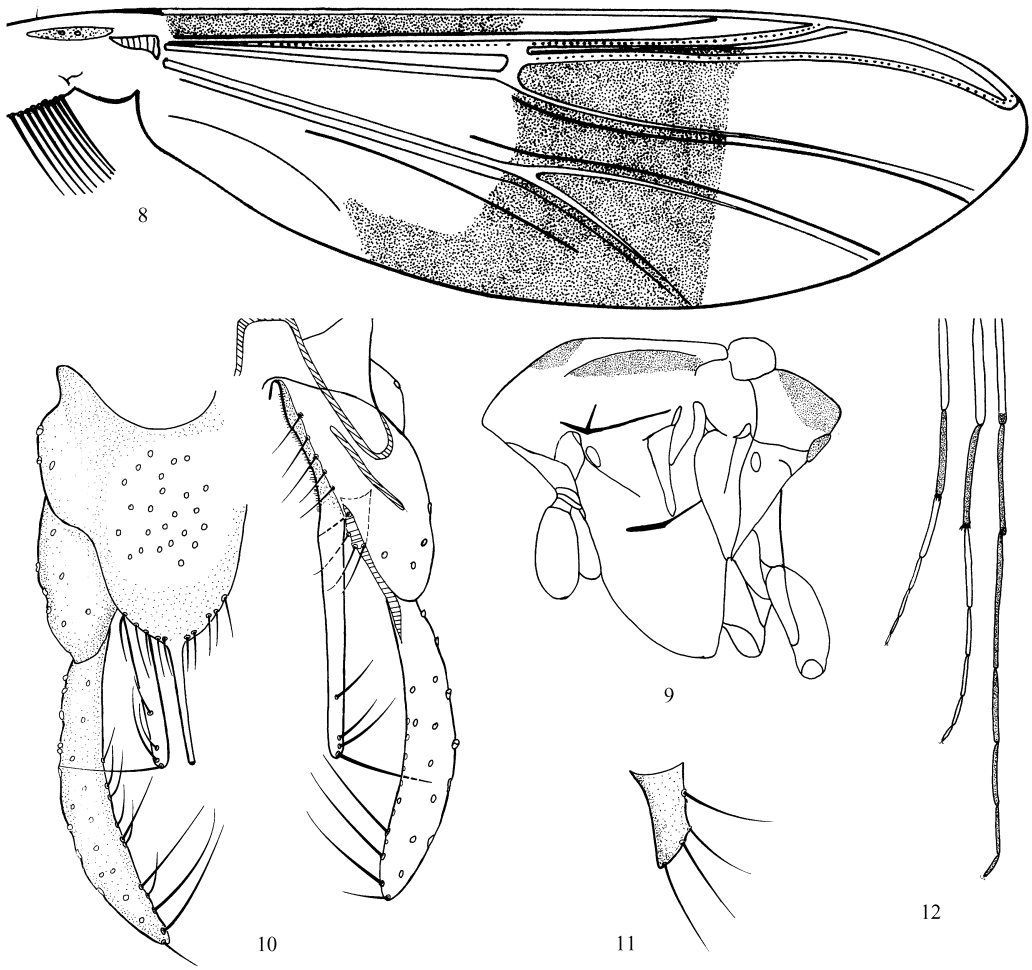
Table **2.** Stenochironomus mucronatus sp. nov. lengths and proportions of legs.

	fe	ti	ta_1	ta_2	ta_3	ta_4	ta_5	LR	BV	SV	BR
p_1	1 020	940	1 260	640	500	440	220	2.34	1.09	1.56	3.33
p_2	960	820	600	320	240	160	80	0.73	2.98	2.97	5.00
p_3	1 060	960	740	400	360	220	80	0.77	2.60	2.73	3.89

Hypopygium (Figs. 5-6). Anal point roughly triangular with pointed apex, 54 μm long. Tergite IX with 19 strong setae; posterior edge of tergite IX with 14 long setae. Laterosternite IX with 3 setae. Phallapodeme 80 μm long; transverse sternapodeme 30 μm long. Gonocoxite 164 μm long. Superior volsella (Fig. 6) 42 μm long, with 5 setae. Inferior volsella 184 μm long, elongate with 4 setae in apical portion and strong terminal spine. Gonostylus slender, 184 μm long, with 3 long and 8 short setae along inner margin of distal 1/2. HR 0.89, HV 1.90.

Distribution. Oriental China (Fujian Province).

Stenochironomus inalemeus Sasa, **2001** (Figs. 8-12)
Stenochironomus inalemeus Sasa & Suzuki, 2001: 11.



Figs. 8-12. S. inalemeus. 8. Wing. 9. The pigmentation of thorax. 10. Hypopygium. 11. Superior volsella. 12. The pigmentation of legs.

Material examined. China, 3 males, Guangdong Province, Fengkai County, Heishiding Nature Conservation Area, 20 Apr. 1988, light trap, WANG Xin-Pu; 1 male, Shaanxi Province, Zhouzhi County, Banfangzi, 10 Aug. 1994, light trap, BU Wen-Jun; 1 male, Shaanxi Province, Liuba County, Miaotaizi, 1 Aug. 1994, light trap, BU Wen-Jun; 1 male, Shaanxi Province, Feng County, 29 July 1994, light trap, BU Wen-Jun; 2 males, Sichuan Province, Ganzi Autonomous County, Yajiang River, 14 June 1996, light trap, WANG Xin-Hua; 1 male, Sichuan Province, Ya'an City, Zhougonghe River, 18 May 1996, light trap, WANG Xin-Hua; 1 male, Fujian Province, Yongtai County, 19 Sep. 2002, light trap, WANG Xin-Hua.

Diagnosis. The wing has a median band and an apical band not extending into cells R_3 and CuA_1; the anal point is parallel-sided with rounded apex; the inferior volsella is elongate with 3 long setae in the apical portion and 1-2 setae in the middle portion. The species is similar to S. satorui, but can be separated by the shape of the anal point and the color of the legs.

Remarks. Sasa erected the species based on Japanese material in 2001. The Chinese specimens mainly fits with the description by Sasa (2001), but show some differences concerning the coloration of the legs. The coloration of the legs in the Chinese specimens is as follows: apical 1/8 of all femora, all tibiae and all fore tarsomeres brown, mid and hind tarsomeres yellow. In the original description by Sasa (2001), it is as follows: all femora largely brown, tibiae of fore and hind legs brown, proximal half of mid tibia brown, and other leg portions yellow.

Distribution. China (Fujian, Guangdong, Sichuan, Shanxi); Japan.

REFERENCES

Ashe, P. and Cranston, P. S. 1990. Family Chironomidae. In: Soos, A. and Papp, L. (eds.), Catalogue of Palaearctic Diptera 2. pp. 113-355.

Borkent, A. 1984. The systematics and phylogeny of the Stenochironomus complex (Xestochironomus, Harrisius, and Stenochironomus) (Diptera: Chironomidae). Mem. Ent. Soc. Can., 128: 1-269.

Cranston, P. S., Dillon, M. E., Pinder, C. V. and Reiss, F. 1989. The adult males of Chironominae (Diptera: Chironomidae) of the Holarctic region-Keys and diagnoses. In: Wiederholm, T. (ed.), Chironomidae of the Holarctic Region. Keys and diagnoses. Part 3. Adult males. Ent. Scand. Suppl., 34: 353-532.

Cranston, P. S. and Martin, J. 1989. Family Chironomidae. In: Evenhuis, N. L. (ed.), Catalog of the Diptera of the Australasian and Oceanian Regions. Bishop Museum Press, Honolulu, USA. pp. 252-274.

Chaudhuri, P. K. and Chattopaduyay, S. 1990. Chironomids of the rice paddy areas of west Bengal, India (Diptera: Chironomidae). Tijdschr. Ent., 133: 149-195.

Chaudhuri, P. K., Hazra, N. and Alfred, J. R. B. 2001. A checklist of Chironomid midges (Diptera: Chironomidae) of the Indian subcontinent. Orient. Insects, 35: 335-372.

Freeman, P. and Cranston, P. S. 1980. Family Chironomidae. In: Crosskey, R. W. (ed.), Catalogue of the Diptera of the Afrotropical Region. Trustees Br. Mus. (Nat. Hist.), Lond. pp. 175-202.

Kieffer, J. J. 1919. Chironomiden der Nordlichen Polarregion. Ent. Mitt., 8: 40-48.

Kristoffersen, L. 1996. A review of Afrotropical polychaetus and spatuliger groups of Stenochironomus Kieffer, 1922, with the description of 4 new species (Diptera: Chironomidae). Mus. Zool. Ins. Zool. Uni., 1-80.

Oliver, D. R., Dillon, M. E. and Cranston, P. S. 1990. A catalog of Nearctic Chironomidae. Res. Bran. Agric. Can. Publ., 1857/B: 89 pp.

Pinho, L. C. D., Mendes, H. F. and Marcondes, C. B. 2005. A new Brazilian species of Stenochironomus Kieffer mining decayed leaves in bromeliads (Diptera: Chironomidae). Zootaxa, 1046: 37-47.

Saether, O. A. 1969. Some Nearctic Podonominae, Diamesinae and Orthocladiinae (Diptera: Chironomidae). Bull. Fish. Res. Bd. Can., 170: 1-154.

Saether, O. A. 1980. Glossary of chironomid morphology terminology (Diptera: Chironomidae). Ent. Scand. Suppl., 14: 1-51.

Spies, M. and Reiss, F. 1996. Catalog and bibliography of Neotropical and Mexican Chironomidae. Spix., 22 (Suppl.): 61-119.

Spies, M. and Saether, O. A. 2004. Notes and recommendations on taxonomy and nomenclature of Chironomidae (Diptera). Zootaxa, 752: 1-90.

Sasa, M. and Yamamoto, M. 1977. A checklist of Chironomidae recorded from Japan. Jap. J. Sanit. Zool., 28 (3): 301-318.

Sasa, M. and Kikuchi, M. 1995. Chironomidae (Diptera) of Japan. Univ. Tokyo Pr., Tokyo. 333 pp.

Sasa, M., Suzuki, H. and Sakai, T. 1998. Chironomidae of Japan, 1998. List of species recorded, and supplemental keys for identification. Res. Rep. Inst. Envir. Welfare Stud., 1: 156 pp.

Sasa, M. and Suzuki, H. 1999. Studies on the chironomid midges of Tsushima and Iki islands, western Japan. Part 3. The Chironomid species collected on Iki island. Trop. Med., 41 (3): 143-179.

Sasa, M. and Suzuki, H. 2000. Studies on the chironomid collected on Goto islands, western Japan. Trop. Med., 42 (3/4): 141-174.

Sasa, M. and Suzuki, H. 2001. Studies on the chironomids species collected in Hokkaido in September, 2000. Trop. Med., 43: 1-38.

Sublette, J. E. and Sublette, M. S. 1973. Family Chironomidae. In: Delfinado, M. and Hardy, E. D. (eds.), Catalogue of the Diptera of the Oriental Region 1. pp. 389-422.

Wang, X-H 2000. A revised checklist of Chironomidae from China (Diptera). In: Hoffrichter, O. (ed.), Late 20th Century Research on Chironomidae. An Anthology from the 13th International Symposium on Chironomidae. Shaker Verlag, Achen. pp. 629-652.

Yamamoto, M. 1981. Two new species of the Stenochironomus from Japan (Diptera: Chironomidae). Bull. Kitakyushu Mus. Nat. Hist., 3: 41-51.

Zorina, O. V. 2001. New species of the genera Cryptotendipes, Dicrotendipes, Microtendipes and Stenochironomus (Diptera, Chironomidae, Chironominae) from the Russian Far East. Vest. Zool., 35 (4): 31-38.

狭摇蚊属二新种及中国一新纪录种 (双翅目, 摇蚊科)

齐 鑫[1,2] 施时迪[2] 王新华[1*]
1. 南开大学生命科学学院 天津 300071
2. 台州学院生命科学学院 台州 317000

摘 要 记录狭摇蚊属 2 新种: 海南狭摇蚊 Stenochironomus hainanus sp. nov., 尖狭摇蚊 S. mucronatus sp. nov. 和 1 中国新纪录种: 印拉狭摇蚊 S. inalemeus Sasa。模式标本保存于南开大学生命科学学院。

海南狭摇蚊, 新种 Stenochironomus hainanus sp. nov. (图 1～3)

本种与花翅狭摇蚊 S. nublipennis 相似。两者的主要区别在于 S. hainanus sp. nov. 的翅透明, 无色斑; S. nublipennis 翅具色斑。

正模 ♂, 中国海南省昌江县坝王岭自然保护区, 1988-05-10, 灯诱, 王新华采。副模 2 ♂♂, 同正模。

词源: hainanus, 地名, 为标本采集地名。

尖狭摇蚊, 新种 Stenochironomus mucronatus sp. nov. (图 4～7)

本种与麦氏狭摇蚊 S. macateei 相似。两者的主要区别在于 S. mucronatus sp. nov. 腹部背板 Ⅰ～Ⅴ浅黄色, 腹部背板 Ⅵ～Ⅷ浅棕色, 生殖节深棕色, 肛尖尖状, 呈三角形; S. macateei 周身浅黄色, 肛尖呈棒状。

正模 ♂, 中国福建省龙岩市上杭县步云村, 1993-05-06, 灯诱, 王新华采。

词源: 源于拉丁语, mucronatus, "尖状", 意指肛尖的形状。

印拉狭摇蚊 Stenochironomus inalemeus Sasa, **2001 中国新纪录** (图 8～12)

观察标本: 1 ♂, 中国福建省永泰县青云山风景区, 2002-09-19, 灯诱, 王新浦采; 3 ♂♂, 中国广东省封开县黑石顶国家自然保护区, 1988-04-20, 灯诱, 王新华采; 2 ♂♂, 中国四川省甘孜县雅江, 1996-06-14, 灯诱, 王新华采; 1 ♂, 中国四川省雅安市周公河, 1996-05-18, 灯诱, 王新华采; 1 ♂, 中国陕西省周至县, 1994-08-10, 灯诱, 卜文俊采; 1 ♂, 中国陕西省凤县, 1994-08-01, 灯诱, 卜文俊采; 1 ♂, 中国陕西省留坝县, 1994-07-29, 卜文俊灯诱。

分布: 中国 (福建、广东、四川、陕西); 日本。

关键词 摇蚊科, 狭摇蚊属, 新种, 新纪录种, 中国.
中图分类号 Q969.442.6

*通讯作者.